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Leonid Lichtenstein



Employment

- since 06/2013 Postdoctoral fellow at the Lawrence Berkeley National Laboratory,
Materials Sciences Division, group of Prof. Miquel Salmeron
*Investigation of water molecules on surfaces using non-contact
atomic force microscopy*

Education

- 11/2009 – 12/2012 PhD Thesis at the Fritz-Haber-Institute of the Max-Planck-Society,
Chemical Physics Department, group of Prof. Hans-Joachim Freund
Topic: The Structure of 2D Metal-Supported Vitreous Silica
grade: excellent (summa cum laude)
*member of the International Max Planck Research School "Complex
Surfaces in Materials Science"*
- 04/2008 – 04/2009 Diploma Thesis at the Institute of Applied Physics, University of
Hamburg, group of Prof. Roland Wiesendanger
*Topic: Investigation of Metal Organic Complexes using Scanning
Tunneling Microscopy and Spectroscopy*
grade: very good
- 10/2006 – 04/2008 Graduate study of physics at the University of Hamburg
Specialization: Nanostructure and Condensed Matter Physics
*Minor Subject Specialization: Industrial Business Studies, Supply
Chain and Marketing Management*
grade: very good (1.2)
- 09/2005 – 06/2006 Study of physics at the University of Paris-South XI, France

10/2003 – 08/2005 Undergraduate study of physics at the University of Hamburg
Minor Subject: Business Studies
grade: very good

2000 – 2003 University entrance qualification at the Dominicus College in Nijmegen, Netherlands, *grade: 1.6*

Work Experience

- 10/2007 – 02/2009 Student tutor, University of Hamburg, physics department
Supervised tutorials for the entry course "Physik I"
- 05/2007 – 07/2007 Student Trainee, NXP Semiconductors, Hamburg
Conducted TCAD-process simulation of high voltage transistors and interpreted data
- 03/2008,
10/2006 Student tutor, University of Hamburg, physics department
Organized and held a tutorial of a mathematical pre-course for first semester physics students
- 06/2006 – 08/2006 Internship, Philips Semiconductors, Hamburg, field: discrete semiconductor development
Conducted an investigation of a competitor on transistors, interpreted resulting data and presented results

Awards and Fellowships

- 07/2013 – 06/2014 Feodor Lynen Research Fellowship of the Alexander von Humboldt Foundation
- 06/2013 Otto Hahn Medal of the Max Planck Society

Publications

M. Heyde, G. H. Simon, **L. Lichtenstein**
Resolving oxide surfaces - from point and line defects to complex network structures
Physica Status Solidi B **250**, 895 (2013)

L. Lichtenstein, M. Heyde, H.-J. Freund
The Atomic Arrangement in Two Dimensional Silica - From Crystalline to Vitreous Structures
Journal of Physical Chemistry C **116**, 20426 (2012)

L. Lichtenstein, M. Heyde, H.-J. Freund
The Crystalline-Vitreous Interface in Two Dimensional Silica
Physical Review Letters **109**, 106101 (2012)

L. Lichtenstein, M. Heyde, S. Ulrich, N. Nilius, H.-J. Freund
Probing the properties of metal-oxide interfaces: Silica on Mo and Ru supports
Journal of Physics: Condensed Matter **24**, 354010 (2012)

B. Yang, W. E. Kaden, X. Yu, J. A. Boscoboinik, Y. Martynova, **L. Lichtenstein**, M. Heyde, M. Sterrer, R. Włodarczyk, M. Sierka, J. Sauer, S. Shaikhutdinov, H.-J. Freund
Thin silica films on Ru(0001): Monolayer, bilayer and three-dimensional networks of [SiO₄] tetrahedra
Physical Chemistry Chemical Physics **14**, 11344 (2012)

L. Lichtenstein, C. Büchner, S. Stuckenholz, M. Heyde, H.-J. Freund
Enhanced Atomic Corrugation in Dynamic Force Microscopy - The Role of Repulsive Forces
Applied Physics Letters **100**, 123105 (2012)

L. Lichtenstein, C. Büchner, B. Yang, S. Shaikhutdinov, M. Heyde, M. Sierka, R. Włodarczyk, J. Sauer, H.-J. Freund
The Atomic Structure of a Metal Supported Vitreous Thin Silica Film
Angewandte Chemie International Edition **51**, 404 (2012)

G. H. Simon, T. König, L. Heinke, **L. Lichtenstein**, M. Heyde, H.-J. Freund
Atomic structure of surface defects in alumina by FM-DFM: Strain relief-, translation- and reflection-boundaries including their junctions
New Journal of Physics **13**, 123028 (2011)

T. König, G. H. Simon, **L. Lichtenstein**, L. Heinke, M. Heyde
Defects in Oxide Surfaces studied by Atomic Force and Scanning Tunneling Microscopy
Beilstein Journal of Nanotechnology **2**, 1 (2011)

D. Löffler, J. J. Uhlrich, M. Baron, B. Yang, X. Yu, **L. Lichtenstein**, L. Heinke, C. Büchner, M. Heyde, S. Shaikhutdinov, H.-J. Freund, R. Włodarczyk, M. Sierka, J. Sauer
Growth and structure of crystalline silica sheet on Ru(0001)
Physical Review Letters **105**, 146104 (2010)

L. Heinke, **L. Lichtenstein**, G. H. Simon, T. König, M. Heyde, H.-J. Freund
Structure and Electronic Properties of Step Edges in the Aluminum Oxide Film on NiAl(110)
Physical Review B **82**, 075430 (2010)

L. Heinke, **L. Lichtenstein**, G. H. Simon, T. König, M. Heyde, H.-J. Freund
Local Work Function Differences at Line Defects on Aluminium Oxide on NiAl(110)
ChemPhysChem **11**, 2085 (2010)

S.-H. Chang, S. Kuck, J. Brede, **L. Lichtenstein**, G. Hoffmann, R. Wiesendanger
Symmetry reduction of metal phthalocyanines on metals
Physical Review B **78**, 233409 (2008)

Language Skills

Russian	Mother tongue
German	Second mother tongue
English	Very good skills
Dutch	Very good skills
French	Very good skills
Spanish	Basic skills

Computer Skills

MS Office, Corel, Origin, Igor, Solid Works, WSxM, programming in C, SPIP, Nanonis, LabView, Avogadro

Interests

Playing Squash, playing the guitar, sailing, learning new languages, traveling the globe

Berkeley, 06/28/2013